

What Is Claimed Is:

1. A method of etching a structure into an etching body using a plasma, comprising:
if an at least approximately ambipolar plasma is present, refraining from injecting a high-frequency power into the etching body via a substrate electrode.
2. The method as recited in Claim 1, wherein:
the etching body includes a silicon body,
the structure is a recess in the silicon body that is laterally defined in a precise manner by an etching mask, using the plasma,
a high-frequency pulsed, low-frequency modulated high-frequency power is injected at least temporarily into the etching body via a high-frequency AC voltage, using the substrate electrode, and
the plasma is modulated in its intensity as a function of time.
3. The method as recited in Claim 2, wherein:
the plasma is pulsed.
4. A method of etching a structure into an etching body using a plasma, comprising:
injecting a first pulse train into the etching body via a substrate electrode; and
injecting a second pulse train into the plasma for modulating a plasma intensity over time, wherein:
a fixed, integral phase ratio exists between the first pulse train and the second pulse train.
5. The method as recited in Claim 4, wherein:
the etching body includes a silicon body,
the structure is a recess in the silicon body that is laterally defined in a precise manner by an etching mask, using the plasma,
a high-frequency pulsed, low-frequency modulated high-frequency power is injected at least temporarily into the etching body via a high-frequency AC voltage,

using the substrate electrode, and

the plasma is modulated in its intensity as a function of time.

6. The method as recited in Claim 5, wherein:

the plasma is pulsed.

7. A method of etching a structure into an etching body using a plasma, comprising:

performing a first pulsing of the plasma at a frequency of at least 500 Hz.

8. The method as recited in Claim 7, wherein:

the plasma is pulsed at a frequency of 1 kHz to 10 kHz.

9. The method as recited in Claim 7, wherein:

the etching body includes a silicon body,

the structure is a recess in the silicon body that is laterally defined in a precise manner by an etching mask, using the plasma,

a high-frequency pulsed, low-frequency modulated high-frequency power is injected at least temporarily into the etching body via a high-frequency AC voltage, using a substrate electrode, and

the plasma is modulated in its intensity as a function of time.

10. The method as recited in Claim 7, further comprising:

performing a low-frequency pulsing of a high-frequency power, wherein:

the first pulsing and the low-frequency pulsing are performed at the same frequency and fixed phase ratio in such a way that a plasma pulse pause occurs during a substrate pulse pause.

11. A method of etching a structure into an etching body using a plasma, comprising:

at least at one time at which an at least approximately ambipolar plasma is present, adding to the plasma an inert gas that is at least one of light and easily ionizable.

12. The method as recited in claim 11, wherein:
 - the inert gas includes helium.
13. The method as recited in Claim 12, wherein:
 - the helium is added at least at one point in time at which no high-frequency power is being injected into the etching body via a substrate electrode.
14. The method as recited in Claim 11, wherein:
 - the etching body includes a silicon body,
 - the structure is a recess in the silicon body that is laterally defined in a precise manner by an etching mask, using the plasma,
 - a high-frequency pulsed, low-frequency modulated high-frequency power is injected at least temporarily into the etching body via a high-frequency AC voltage, using a substrate electrode, and
 - the plasma is modulated in its intensity as a function of time.
15. The method as recited in Claim 14, wherein:
 - the plasma is pulsed.
16. A method of etching a structure into an etching body using a plasma, comprising:
 - performing a first modulation of an intensity of the plasma as a function of time;
 - setting as a plasma pulse frequency an odd-numbered multiple of a frequency of a low-frequency modulation of a high-frequency power injected into the etching body via a substrate electrode; and
 - synchronizing the first modulation and the low-frequency modulation with one another so that n plasma pulses ($n = 1, 2, 3, \dots$) fall in each pulse injected into the etching body using the substrate electrode while $n + 1$ plasma pulses occur during a pause in an energy injection into the etching body.
17. The method as recited in Claim 16, wherein:
 - the etching body includes a silicon body,

the structure is a recess in the silicon body that is laterally defined in a precise manner by an etching mask, using the plasma, and

a high-frequency pulsed, low-frequency modulated high-frequency power is injected at least temporarily into the etching body via a high-frequency AC voltage, using the substrate electrode.

18. The method as recited in Claim 1, wherein:

the structure includes a trench having a high aspect ratio, and

the etching body includes one of a dielectric layer and a dielectric base body.

19. The method as recited in Claim 1, wherein:

the etching body includes a layer of silicon,

the structure includes a trench having a high aspect ratio,

the trench is introduced into the silicon layer, and

after a production of the trench, at least one of an isotropic underetching and an isotropic, sacrificial-layer etching is performed.

20. The method as recited in Claim 19, wherein:

the at least one of the isotropic underetching and the isotropic, sacrificial-layer etching is performed using one of fluorine radicals and a highly oxidizing fluorine compound.

21. The method as recited in Claim 20, wherein:

the highly oxidizing fluorine compound includes ClF₃.